

ICT 2010
[August 2020, Term 2] Test 1

Full Name:

Student ID:

Instructions

Answer *all* the questions

Mark allocation is indicated [in square brackets] on the right side of the questions

Duration: 2 hours 20 minutes

Total Marks: 40

Write your answers in the spaces provided

- 1) Given the following **switch** statement:
write an equivalent **if elseif** statement

[6]

```
int day = 4;

switch(day){
    case 3:
        System.out.println("Tuesday special");
        break;
    case 4:
        System.out.println("Wednesday");
        break;
    default:
        System.out.println("not Wednesday");
        System.out.println("nor Tuesday");
        break;
}
```

Answer

- 2) Determine the output from the following program's if elseif statement? [2]

```
String student1 = "John";
String student2 = "Zulu";

if ( student1.compareTo(student2) < 0 ) {
    System.out.println("Student 1 is " + student1);
}
else if( student1.compareTo(student2) > 0 ) {
    System.out.println("Student 2");
}
else {
    System.out.println("Possible duplicate!");
}
```

Answer

- 3) Briefly describe a NullPointerException in Java [1]

Answer

- 4) What will be the output displayed from the following Java code segment? [1]

```
int num = 5;
final int LIMIT = 7;

for(int i = 5; i <= LIMIT; i++) {
    int x = (i+i) - 1;
    num = num + x;
}

System.out.println(num);
```

Answer

- 5) What will be the output displayed from the following nested loops? [1]

```
while(i <= j) {  
    while ( i < 3) {  
        if ( i >= j) {  
            i++;  
        }  
    }  
    j--;  
}  
System.out.println(j);
```

- A) 1
- B) 0
- C) 2
- D) Infinite loop

Answer

- 6) Name the **exception** that will occur from the following code segment [1]

```
String text = "25K";  
num = Integer.parseInt(text);
```

Answer

- 7) What will be the output displayed from the following code segment? [1]

```
String student1 = "Jack";  
String student2 = "Jane";  
if ( (student1.compareTo(student2))%2 > 0 ) {  
    System.out.println("Student 1 was picked");  
}  
else {  
    System.out.println("Student 2 was picked");  
}
```

- A) Student 1 was picked
- B) Student 2 was picked
- C) A syntax error
- D) No output displayed

Answer

- 8) What will be the output displayed from the following code segment? [1]

```
double scoreA = 9.0;
int scoreB = 9;

if(scoreA = (double)scoreB) {
    System.out.println("Equal scores found");
}
```

- A) *A syntax error*
- B) *A runtime error*
- C) *No output displayed*
- D) *Equal scores found*

Answer

- 9) Given the following Java statement

```
Scanner scan = new Scanner(System.in);
String text = scan.next();
```

Write a for loop which will display all the characters in the **text** variable with a space between each character from the **text** variable. After this, the characters from the **text** variable should be displayed in reverse order with spaces in between each character (using the same loop).

[6]

For example

If the value of **text** is **July**

Then the output should be **J u l y l u J**

If the value of **text** is **Mat**

Then the output should be **M a t t a M**

(You can use *IF* statements within your loop)

Answer

10) What will be the output displayed from the following while loop?

[2]

```
int s = 1;
int n = 1;
while ( n < 4 ) {
    s += n;
    System.out.print(s + ",");
    n++;
}
```

Answer

11) The following Java code segment contains **6 errors**. For each error: indicate the line number of the error and briefly describe what the error is.

[3]

```
6  Scanner scan == new Scanner(system.in);
7  double income = scan.nextDouble();
8  int loan = scan.nextDouble();
9
10 if(income.equals(loan)) {
11     System.out.println("Account error, visit your bank branch");
12 }
13 else if {
14     Systems.out.println("New account created succesfully");
15 }
16
```

Answer

12) The following text segment comes from a file named **names.txt**.

```
BandaR 51231
SmithK 14587
MuluweJ 28714
PetersM 5781
```

Each line of the file names.txt contains a customer's **account name** and an **account_number**.

Write a **Java program** that will read the information from the file names.txt, and display (to the screen) the lines whereby the account number is less than 20100. [8]

(Write the full Java code, including the import statements(if any) and a class name)

Answer

13) Name the **exception** that will occur from the following code segment [1]

```
int x = 25;
int num = x % 0;
```

Answer

14) Given the following Java statement

```
Scanner scan = new Scanner(System.in);  
int n = scan.nextInt();
```

Write a while loop which will display all the even numbers from **n** (variable) down to 1 with a comma between each number (using the same loop).

[4]

For example

If the value of **n** is **8**

Then the output should be **8,6,4,2**

Answer

15) What will be the output displayed from the following do-while loop?

[2]

```
int x = 22, y = 4;  
int i = 0;  
do  
{  
    y/=2;  
    x += y;  
    i++;  
}  
while (y > 2);  
System.out.println(" i = " + i);
```

Answer

Total: [40 marks]